

Presents practical tips and preventative measures

New!

# Laser Safety

## Tools and Training

Edited by **Ken Barat**

Lawrence Berkeley National Lab, California, USA

Optical Science and Engineering Series • Series editor: **Brian J. Thompson**, University of Rochester, New York, USA

### Use Lasers Safely and Effectively

Lasers perform many unique functions in a plethora of applications, but there are many inherent risks with this continually burgeoning technology. **Laser Safety: Tools and Training** presents simple, effective ways for users in a variety of facilities to evaluate the hazards of any laser procedure and ensure they are following documented laser safety standards.

Designed for use as either a stand-alone volume or a supplement to *Laser Safety Management*, this text includes fundamental laser and laser safety information and critical laser use information rarely found in a single source. The first laser guide written by a working Laser Safety Officer (LSO), its depth and breadth make it appropriate for both the seasoned professional and the novice. It presents case studies of real accidents, preventive measures that could have been taken to avoid such accidents, and templates for documenting potential laser risks and attendant safety measures.

Reflecting the exponential use of laser technology over the last several years, this text considers the growing use of petawatt laser installations and nanotechnology applications and addresses current laser projects such as the National Ignition Facility (NIF) and Linac Coherent Light Source (LCLS). Several chapters explore the components of laser work and laser safety that deal with optics, the optical table, the power meter, and user training.

Ken Barat is the LSO for the Lawrence Berkeley National Laboratory, the first Department of Energy national lab. He also served as the LSO for the National Ignition Facility Directorate at Lawrence Livermore National Laboratory and is a member of the Laser Safety Forum in the United Kingdom. Internationally recognized, he has collected the wisdom of the top minds in the laser field to present a practical, straight-forward handbook that helps those who work with lasers to harness their potential without endangering themselves or the people around them.



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### FEATURES

- Serves as a stand-alone text or a supplement to the companion volume *Laser Safety Management*
- Presents the fundamentals of lasers and laser safety information
- Describes how exposure safety limits are determined
- Provides simple steps to evaluate laser hazards in a holistic manner
- Offers explanations of beam diagnostics, how grading works, and how to select the correct power meters
- Details a variety of laser applications, from the Petawatt laser to nanotech settings
- Includes over 150 diagrams and photographs to clarify the material

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- What Are They Talking About?, *K. Barat*
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- How to Select Optical Mounts: Getting the Most Out of Optical Mounts (Understanding Optical Mounts), *D. Kopala*
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